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Cereus pseudomelanostele



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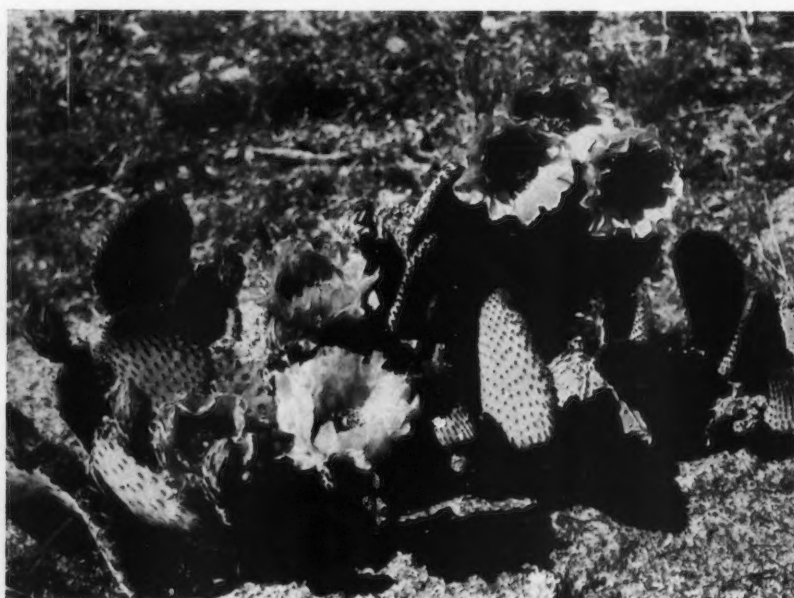
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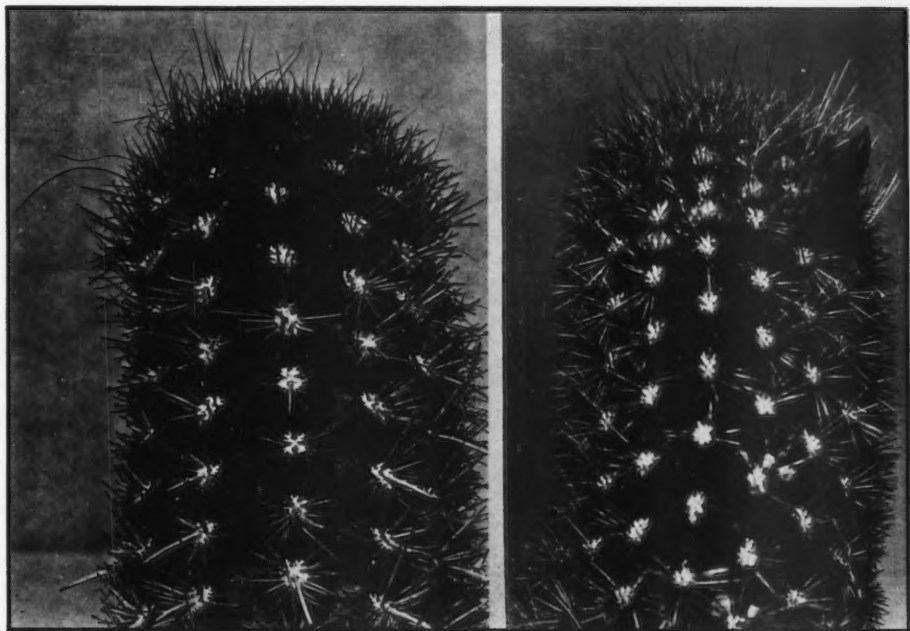
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Courtesy Standard Oil Bulletin

Opuntia basilaris (See Britton and Rose Reprint)



Cereus pseudomelanosteles showing the cephalium-like head and bristles.

Photographs by Curt Backeberg

Cereus aurivillus

Genus *Binghamia*

By CURT BACKEBERG

Translation by JAMES WEST

On page 52 of his "*Entwicklungslinien der Kakteen*" Alwin Berger describes the characters of the genus *Binghamia* as follows: "A true pseudocephalium is not yet developed here, but the flowering area, i.e. the flower-bearing side of the respective branches, produces a dense mass of long, white or yellowish, bristle-like spines; ovary and fruit are without spines and naked, the flower-tube also being hairless."

Berger had propagated from seeds of one species, *Binghamia melanosteles*, which Dr. J. N. Rose had collected near Santa Clara in 1914. Having myself thoroughly investigated the Santa Clara area, I know that the plants in question were not of that species, but what we are now calling "*Binghamia*" *pseudomelanosteles*.

First of all, I shall explain the status of the species *melanosteles* and *pseudomelanosteles*. The name *melanosteles* originated with Dr. Vaupel

who described a specimen sent him by Prof. Weberbauer. This plant was an *Espostoa*-like species, belonging near that genus on account of flowers, fruit and similarity of habit. It is not a *Cephalocereus*, and most certainly it has nothing to do with Dr. Rose's genus *Binghamia*.

Dr. Rose's error most likely originated in the fact that Dr. Vaupel drew up his description from an old specimen in alcohol and so, instead of indicating the color of spines, hair and cephalium as white or yellowish, described it as darker, as brownish. Dr. Rose presumably was looking for a plant of that description and, not being able to find it, erroneously took for *Cereus melanosteles* that which we now call *pseudomelanosteles*. The plant which Dr. Vaupel described as *C. melanosteles* was introduced by Rose in *Espostoa lanata*, as is evident from the illustration in Berger's *Entwicklungslinien*, p. 52. From that species however it differs con-

siderably, as I have pointed out in detail in my "Neue Kakteen," although doubtless it is nearly allied to *Espostoa*.

What arouses suspicion right away is the fact that Rose speaks of a mass of long hair on the flowering side; he must have included this character on the strength of Dr. Vaupel's description of *C. melanostele*, in part perhaps also based it on specimens of *C. aurivillus*, a well-known plant, but one he had not himself seen in Peru. In addition there is the fact that *C. pseudomelanostele* develops a quantity of white hair, though only loosely around the whole body of the plant. A massing of these hairs particularly on the flower-bearing side, found also in *C. eriotrichus* from the same neighborhood, can however in no way be stated to exist here, and even less so in "*Binghamia*" *acrantha*, which does not produce hairs of any kind, nor yet in *C. chosicensis*, a species of my own discovery which has red-violet flowers in contrast to the greenish-yellow ones of *pseudomelanostele*.

Furthermore, the fruit is mentioned as being naked and the tube as hairless, while my pictures show quite distinctly that the tube is well-provided with hairs.

Therefore we have here a case of mistaken identification.

Let us now first consider *C. aurivillus*. This species develops a considerable quantity of bristly hairs on the flower-producing side. A nearly allied species, in shape and structure of flower and fruit and in habit, is *C. plagiostoma*, which might be described as a coarser-spined *C. aurivillus*. Until lately I had not been able to find hairs in this species, at least not on the flower-bearing area. However I had brought along a couple of mature specimens of this rare rufous-spined relative of *C. aurivillus* for propagation and further study. One day to my surprise I suddenly noticed longish bristles beginning to appear on one side of the apex of *C. plagiostoma*, and before long one of the plants had a shock of bristles exactly like that of *C. aurivillus*. The flower also is of similar structure, but differs in color, being bluish red with pale margin, in its larger size and great beauty.

We have therefore clear proof that the inflorescence in these species is accompanied by a greater or lesser development of bristles, just the character which Rose indicated for the genus *Binghamia*. As he did not himself encounter *C. aurivillus*, an error must somehow have insinuated itself. But as he correctly rec-

ognized this structure and duly characterized it by formal description:

The genus *Binghamia*, from its characters as described, consists of

1. *C. aurivillus*
2. *C. plagiostoma*,

both being native to the region of the Rio Huancabamba. As that area contains several peculiar Cerei, one may suppose that it is a case of descent from plants of an anciently isolated vegetational area.

But now what are we to do with the former "*Binghamia*" *melanostele* (the present *C. pseudomelanostele*), with *C. acranthus* and *C. chosicensis*?

The floral structure of the following species is more or less alike:

C. acranthus, *C. pseudomelanostele*, *C. chosicensis*, *C. versicolor*, *C. versicolor* var. *humifusus* (which latter is certainly a distinct species.)

In general, the form of the flowers resembles that of *Borzacactus*, except that there is, as the picture shows, not the slightest trace of zygomorphy. The fruit likewise is similar in all the species, also the seedlings, which develop from a globular hypocotyl with rudimentary cotyledons and resemble very much those of an *Echinocactus*.

The first three Cerei come from the lower levels of the central Peruvian coast, the two latter from two quite similar dry-plains areas in northern Peru. One may assume the existence of further yet undiscovered species in similar localities between the Despoblado and the Rimac valley.

Without doubt, we have here to do with a separate subgenus, for which I propose the name *Haageocereus*. In such a subgenus I had from the beginning included *C. versicolor*, not being aware at the time that further similar species would have to be added to it.

Additionally it may be remarked that the flowers of *Binghamia aurivilla* and *B. plagiostoma* are sparsely hairy, and that the buds of all *Haageocerei* make their appearance as rounded white-hairy knobs, while *B. aurivilla* and *B. plagiostoma* have naked buds.

As these Peruvian Cereae are among the handsomest of the entire *Cereus* tribe, I believe that a clarification of their systematic position was in order.

Incidentally I am convinced of the existence of natural hybrids between *B. aurivilla* and *B. plagiostoma*, as I discovered several densely rufous-haired specimens of *B. aurivilla*.



Courtesy Pacific Mutual News © and photo by
Stephen H. Willard

Desert evening primrose with San Jacinto in the background.

Desert in April

By JACOLYN MANNING

We left Pasadena at dawn in April, our destination a mysterious desert valley in the back country of Arizona, where the giant Sahuaro stand in singles, doubles, or congregate in stately groves. This valley in the shadow of the Ibex Range was said to contain a specimen of that gorgeous phenomena, the floriation of the head of *Carnegiea gigantea* into an emblazoned crest. This we sought.

We motored via San Bernardino, Indio, Mecca, Blythe, and the Sunkist Trail. Our armament, cameras, canteens and a gun.

The long smooth highway was fragrant with perfume from orange orchards whose flowering trees appeared lightly veiled in hoar frost. Redlands, seventy miles on our way, was also fragrant with that delicious aroma distilled from the breakfast coffee bean. Mount San Jacinto, ten thousand feet high, carried a snow banner, as we skirted his granite flanks, rising abruptly from desert sands.

Apiaries, alfalfa, miles of new-set vineyards, a sign, "egg-factory-three-miles-north", sheep, roses, stately palm, umbrella, and pepper trees, and tamudas dripping with the purple fragrance of wistarias,—all this before we reached Redlands. Then almond and apricot orchards in bloom, the rising slopes golden-green with mustard, the apricot trees trimmed to goblet form.

San Jacinto tapered down in a long, low crest like a great saurian. The foreground is rosy with the sand verbena, and faintly fragrant from the popcorn flower. We ignore a turn to the right which leads to Palm Springs. Miles of barren stony acres—miles, and miles, and miles! Then new strange orchards ahead that look like giant osmundi ferns, and we reach Indio, an oasis, and the center of the date industry.

Not only dates and onions, but sweet corn, for sale, in April! "Sure," the man at the filling station smiles, "with hot water irrigation we

can grow anything in Indio, all the year 'round!"

"Hot water irrigation?"

"Yeah—hot springs at Indio, lady, we turn the warm water on the gardens when we have a cold spell. But you will find ice water in all the street fountains. Which way you headed—Blythe?—better take a long drink."

We drink at the public fountain. Delicious ice-water—free—in the desert! Incredible!

On to Mecca. Running now below sea level we pass the road to Imperial Valley. There is a great silvery plain to our right stretching to infinity, and blue, blue, blue. It is the Salton Sea of unduplicated delicate beauty, bordered, in season with the gray-green lily of the desert whose delicate beauty is also unsurpassed.

We pass the road to Painted Canyon, and enter Box Canyon "where," our host says, "California got nervous." Rocks, nothing but,

with the strata at every angle, even at right angles to the hewn out bed of the canyon, hewn out by Gog and Magog when the world was young. A stop for lunch at Shafer's Wells among the smoke trees, more than midway through the canyon. It is very warm as we emerge from Box Canyon to cross the desert plain to Desert Center and Blythe.

Shimmering waves of heat and dancing dust devils preceed us on the ribboned highway across the sand to Desert Center. The radiator boils all the way, spouting a geyser when water is added from canteen. No ice at Desert Center. The bottled drinks are lukewarm.

We do not linger, but take the burning road for Blythe. Skirting pink hills at our left we glimpse the new aqueduct which is to convey snow water to the ever multiplying millions of the Southwest.

The town of Blythe at 110 degrees Fahr., is



Courtesy Pacific Mutual News © and photo by Stephen H. Willard

Sand verbena lending color to the rolling sand dunes.



Carnegiea gigantea ("Suhauro") in flower

yet inviting with its quiet avenues of green shade trees, but on we must go to complete our run of three hundred miles to camp. We re-fuel and tuck in a limeade, and start across that old single track levee to the Colorado River bridge. Graceful spires of pink athel sweep above.

This evergreen Tamarisk, imported from the deserts of North Africa and Arabia, and now used as a windbreak around desert ranches, is known locally as Athel. The tree has many uses and is also beautiful. Here at Blythe it had been planted on each side of the crest of the long levee, to protect the banks from wash-

ing when the great river floods. *Tamarisk articulata* was introduced to Southern California in 1916, by Prof. J. J. Thornber of the University of Arizona. Thornber had been propagating scions imported from Algeria in 1909, and presented eight cuttings to the Government Date Garden at Indio. "The tree grows with amazing rapidity under heat and irrigation, as much as twenty feet or more a year."

Indio supplied the "hot water irrigation" and distributed thousands of cuttings; we had passed many miles of athel hedges with no recognition on my part, until the filmy pink sprays swept my cheek. "Tamarisk!" I exclaimed. "Athel," corrected our host, "same old hedge on those desert ranches. Don't you recall what the prophet Jeremiah said—'A man that trusteth in man shall be like a tamarisk in the desert'!"

(To be continued)

The following correspondence, bearing on the activity of the Cactus and Succulent Society of Great Britain, is of interest to members of the American Society in that "The Cactaceae" is as difficult to obtain in this country as in England.

"Dr. N. L. Britton, New York, N. Y.

"Dear Sir:

"My recent book, 'Study of Cacti,' is the result of my efforts to clear my own ideas when I first became interested in the subject. I soon realized that the classification given in the Monograph by yourself and Dr. Rose, was a great improvement on the earlier systems, and have always used it in my own small collection; other people in this country are also aware of its great value and the new generic names are often used in the catalogue of Continental dealers; but the great obstacle to its wider use in this country is the difficulty of consulting the Monograph; there are one or two copies in private ownership (I have not yet been fortunate enough to obtain one) and several Libraries have copies available, but to become really familiar with a subject one wants a book that one can turn to frequently, as different points arise.

"The re-awakening of interest in Cacti and Succulents is evidenced by the formation of the Cactus and Succulent Society of Great Britain (of which I am the Hon. Secretary). But the great need was for a more up-to-date book than is available in this country, which would collect together the information available and especially give people an introduction to your system of classification; it seemed to me that a combination of the botanical and horticultural sides would be advantageous."

VERA HIGGINS,
East Croydon, England.

"STUDY OF CACTI"

The treatment of the subject is clear, accurate and concise; I tender you congratulations on its publication, with best wishes for its rapid distribution. The book is an excellent beginning for the Cactus and Succulent Society of Great Britain, under the noteworthy Presidency of Sir William Lawrence.

N. L. BRITTON, *Honorary President,*
Cactus and Succulent Society of America.



G. A. FRICK

Mr. Frick was born in Cleveland, Ohio, March 1, 1878. He is of German descent and was the youngest of 10 children. His father was a shoemaker and died when he was 8 years of age. He attended the public school, which in those days taught German, but had to leave school at the age of 13 years to work in a factory, and at the age of 15, he started his first cactus collection. The first few plants were presented to him by an old German tailor who had acquired the hobby in Germany. This first collection died a few years later from neglect, and soon after he took Horace Greeley's advice and went West to grow up with the country. He arrived in Los Angeles, February 8, 1898.

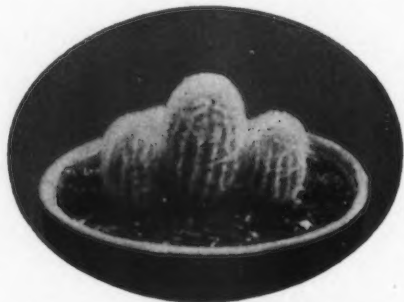
In launching the Cactus Society, Mr. Frick was one of the charter members. He describes the formation of the Society as follows: "I had been corresponding with James West of San Rafael for some time concerning an organized effort toward the publishing of a Cactus Magazine in America, which he was as anxious as myself to see launched, but neither of us could find the person or publisher that would finance the project. In the fall of 1928 I made a visit to Dr. Houghton's home to chat about cactus, and I told him of Mr. West's and my ambition to which he suggested that a meeting of all the collectors we knew, be called at his home in San Fernando for the purpose of organizing a Cactus Society and to publish a magazine. With this suggestion, I appointed him President, Pro-Tem and in return he appointed me Secretary, Pro-Tem and the next day I mailed out 40 letters to every collector I knew in California. Following is a copy of the letter: 'Your presence is requested at the rare plant gardens of Dr. Houghton in San Fernando, California, Sunday, January 6th, 1929 at 2 P. M. for the purpose of organizing a Cactus Society. Bring any other Cacti collectors with you that you may know to be interested. G. A. Frick,

Sec'y. Pro-Tem.' There were 110 people responded to this call of which 39 paid \$1.00 and became charter members. Speeches were made by James West, Dr. Houghton and Col. Perrie Kewen. The wind was raw and cold so the meeting only lasted about one hour but that was long enough to give birth to the Cactus and Succulent Society of America."

It was about 1925 that his boyhood hobby again took root and another collection of cactus was started. He was not long in learning that with cactus available at his back door, his collection of both cacti and succulents was more than his limited time permitted, so he specialized on the group of plants that attracted him most, which was the Euphorbiaceae. Mr. Frick claims that although the flowers of Euphorbias are not spectacular, the plants themselves are sufficient. The rarity of this group also seemed to appeal to him more than cacti and succulents.

Mr. Frick has more than 200 species and varieties including several unnamed hybrids of his own creation. His collection is housed in 4 glass houses and only a few are planted in the open ground. Each time he has exhibited under competition he has won first prize at the Cactus Shows.

After reading articles written by our members, there seems to be a desire to meet and to know more about the authors and their work. We are interested to know what kind of people collect cacti and how they became interested and what they are accomplishing in their hobby or their work. With this in mind, we wish to introduce our officers of the Society and botanists who supply us with their interesting articles. Our first introduction is G. A. Frick of 1800 Marengo St., Los Angeles. Mr. Frick should receive first honor because it has been through his tireless effort and loyalty that the Society and the Journal was not only started but maintained. He does not seek publicity or personal gain but for five years he has shown the same dependable loyalty in his work with the Society.—S. E. H.



Pilocereus dautwizii var. *Espostoa lanata*, is considered by Mrs. H. Winter of Frankfurt, Germany to be the prettiest and most outstanding of all cactus with its white silk-like woolly coat. The photo shown herewith is that of 18 month old seedlings.

The following 8 pages are reprinted from "The Cactaceae" by N. L. Britton and J. N. Rose.

Stapelia semota n. sp.

By N. E. Brown

Stapelia semota N. E. Br. Stems, according to a drawing, very similar to those of *S. Cooperi* as depicted on pl. 445 of "Flowering Plants of South Africa" and spotted as in that plant, about 3 inches long and $\frac{1}{2}$ - $\frac{3}{4}$ inch thick, 4-angled with stout and very acute spreading or ascending teeth $\frac{1}{4}$ - $\frac{1}{2}$ inch long, glabrous, spotted. Flowers several together, developed successively. Pedicels $\frac{3}{4}$ -1 inch long, glabrous. Calyx-lobes about 3- $\frac{1}{2}$ lines long and 1- $\frac{1}{4}$ line broad, lanceolate, acuminate, glabrous. Corolla in bud ovoid, bluntly pointed; when expanded with the lobes spread out $1\frac{1}{2}$ - $1\frac{3}{4}$ inches in diameter, but when alive they are evidently reflexed or recurved and about 8 lines long and 4 lines broad, ovate-lanceolate, acuminate, rugose on the face and glabrous on both surfaces, but ciliate nearly to the apex with vibratile, clavate, purple hairs, apparently of a dark chocolate color variegated with yellow markings; the disk-part is elevated into a thickened and somewhat pentagonal ring 5-6 lines in diameter, smooth, dark chocolate. Outer corona of 5 lobes about 1 line long and 1 line broad, subquadrate or slightly widened upwards, not quite truncate but very shortly and very bluntly pointed or sometimes with the side angles slightly produced so that the apex appears obsoletely 3-toothed, glabrous and apparently dark chocolate with yellow markings. Inner coronal lobes $\frac{3}{4}$ line long, incumbent upon and not produced beyond the tips of the anthers, ovate, obtuse, with a dorsal hump, but entirely without horn or wing-like processes, apparently dark chocolate with yellow markings. Tropical Africa: At Mondoa in Tanganyika, *Burtt* 1450.

The above novelty is described from dried specimens and a pencil drawing. It appears to be nearly related to *S. Cooperi*, N. E. Br. but differs by the lobes of the corolla being less rugose on the inner face and ciliate almost to the apex and by the differently shaped outer and inner coronal lobes.

In South African Flowering Plants, v. 12, pl. 445, published January, 1932, Dr. Phillips founds a new genus, which he calls *Stapeliopsis*, upon *Stapelia Cooperi*, evidently overlooking the fact that another and totally different plant already bore that name, see *Stapeliopsis*, Pillans in South African Gardening, 1928, p. 32. But with reference to the question of making a new

genus for *S. Cooperi*, I have stated in *Flora Capensis*, v. 4, sect. 1, p. 975 that it "does not quite agree with *Stapelia*, or any other genus in structure, but I do not know where else to place it. The corona seems to be a combination of that of *Caralluma* and *Piранthus*, whilst the corolla resembles somewhat that of *Stapelia Woodii* and its allies with an annulus added, but the difference is scarcely worth generic distinction." I have again examined *S. Cooperi* and its allies, of which Dr. Phillips makes no mention, and find that both the structure of the corolla and of the corona so insensibly passes into that of typical *Stapelia*-structure that not a single character can be found whereby to distinctly separate *S. Cooperi* and *S. semota* and allies from the genus *Stapelia*. The presence or absence of an elevated ring on the corolla is certainly of no generic value in this group. The length of the outer coronal lobes varies greatly and in some specimens of *S. Cooperi* and allies are very short, but I have not seen any other corona as short as represented on the above quoted plate 445; in the specimens seen they are very much longer than there figured, neither do I find them to be connate, which latter character is the only one given to distinguish it from *Stapelia*, otherwise the figure seems to represent *S. Cooperi* very fairly. In my opinion *Stapeliopsis*, Phillips can only be considered as a synonym of *Stapelia*. But *Stapeliopsis*, Pillans is unquestionably a very distinct genus, quite unlike any other.

No botanist can study a family of plants exclusively fertilized by insects such as *Asclepiadaceae* and *Orchidaceae* without soon discovering that many of the genera and species belonging to it are of hybrid origin. This is very obvious among the *Stapeliaceae* and appears to have been brought about somewhat in the following manner. The seeds of this group are furnished with a tuft of long and fine hairs by means of which they may be blown by wind for a considerable distance. If one is carried from its own area to that inhabited by a different genus or species of the same group and develops into a plant, as it can only be fertilized by insect aid it will stand a great chance of being hybridized or of hybridizing the other species. And if that occurs and the offspring develops into flowering plants a new form comes into being, which, if we know its parentage we call

a hybrid, but if we do not know its parentage we call a species and the latter is mostly the case. From the very great amount of variation found in the corolla and corona of *Stapelia* as at present constituted and from the manner in which these variations are all found to merge into one another when the whole series is taken into consideration, it becomes evident that hybridization must have occurred in numberless directions to have evolved the present group of species. And upon a close study of the group I have found it hopeless to further divide the genus, as no characters can be found that are constant. When only a few species are reviewed it may seem practicable, but not when the whole are examined.



Borzicactus icosagonus

BORZICACTUS ICOSAGONUS

By YSABEL WRIGHT

This plant, first described by Humboldt, Bonpland and Kunth in 1823, and later found by Dr. Rose growing profusely on the dry hills near Nabon, in Ecuador, was collected by Mr. Curt Backeberg during his expedition to South America in 1931, and a specimen sent to me by him blossomed in my garden on November 25th, 1932.

It will be noticed that many of these plants originating in South America, where the seasons are reversed, bloom during our winter months, which correspond to their summer.

Having been unable to find any full published description of this plant, I have asked Kathe Schlange to prepare the following, to accompany the illustration.

Borzicactus icosagonus

Plant 15 cm. long, 4.2 cm. in diameter, slenderizing towards apex, and there rounded off and covered by yellow-brownish tipped, short, acicular spines mixed with curly yellowish-gray wool from youngest areoles. Ribs 17, sharply cut at young part of stem but flattened out towards base. Areoles 1.5 to 3 mm. distant, oval, 3-4 mm. in longest diameter, smaller and more approximate at older part of stem, with a short, horizontal groove above each one. Ribs slightly swollen around areoles. The lower two-thirds of areole clad with grayish-white wool, upper third bearing clean yellow wool. Outer circle of radials consists of about 20 fine, sharp acicular, light-yellowish spines, 5 to 10 mm. long, the lower ones longest. Inner circle of spines 8 to 10, slightly stronger, a little shorter, darker yellowish with brownish colored points, also lower ones are longest. The 1 to 2 central ones are again stronger, of deeper yellowish-brown color, to 14 mm. long.

Flower buds covered with white wool appearing out of areoles at younger part of stem. Flower 7 cm. long, opens campanulate 3.5 cm. wide. Ovary about 0.75 cm. long, light green scaly, with gray-white wool in axil of scales. Tube slender, 4 cm. long, to 1 cm. in diameter, orange-red. Scales along tube 10 to 12 mm. apart, lanceolate with curly, gray-yellow wool in axils. Throat of flower widens to 1.5 cm. in diameter, with scales growing out into outer perianth-segments, curving slightly outwards. Outer perianth-segments lanceolate, 3 mm. wide, one to 2.1 cm. long, orange-red like the tube, but with yellowish-orange glow on inner side and narrow yellowish-orange margin. About 12 inner perianth-segments, slender, oblong, apiculate, to 2.2 cm. long, and 4 mm. wide. Orange-red with silky rose-red flow along inner side. Filaments fastened along inner side of tube, the innermost ones 3.5 to 4 cm. long, while outer circle of filaments is only 1.5 cm. long, lower two-thirds yellowish, upper third pink. Anthers yellowish, 1.5 mm. long. Style slightly shorter than the filaments, rose-red, with 6 light-green, 3 mm. long, stigma-lobes reaching as high as outer filaments. Flower opens during morning hours, opens for three days, closing at night.

The reproduction of a page of the Blanc catalogue in last month's issue of the Journal has brought a deluge of requests for information as to where these are available. We wish to inform the many inquirers that we have none in the society library and do not know where they can be obtained. They are very rare and only a very few of them are known to still exist.

Better than Bolusii!

PLEIOSPILOS NELII Schw.

By JAMES WEST



J. West photo

Pleiospilos Nelii Schw. life size

All of us got excited over *Pleiospilos Bolusii** when first it swam into our ken; it still deserves, and gets, popular admiration. But here is something to put it in the shade; finer yet in almost every way: More beautifully sculpturesque in form, with flowers superior in shape, color and port, moreover even hardier.

Comparatively new though it be, the beauty already rejoices in several names, having two synonyms in addition to its official one of *Pleiospilos Nelii* Schw. *P. peduncularis* L. Bol. and *P. tricolor* N. E. Br. One feels rather sorry that, for reasons of priority of publication, Dr. Brown's name could not have been retained, for it well describes the three-colored effect of the flowers; a center of fulvous anthers surrounded by the whitish ring of the petal-bases, the whole encircled by an outer zone of glorious coppery-apricot, soft, yet gleaming with the metallic shimmer, characteristic of so many of the tribe.

However, if it had to bear a personal name, Professor G. C. Nel well deserves the honor, for having, with the aid of his curator, Mr. H. Herre, developed the fine *Mesembryanthemum* collection at the University of Stellenbosch. Dr.

Schwantes received the plant, collected in the Willowmore Division, from the latter source, and published the species in July 1930 in *Monatsschrift der Deutschen Kakteen-Gesellschaft*. Mrs. Bolus at Cape Town was not far behind, but just missed having her name recognized, publishing *Pleiospilos pedunculatus* a month later, in the August number of *South African Gardening and Country Life*. Which may serve to point a moral to all would-be botanical authors not to delay getting into print. Mrs. Bolus' specimens were collected in February of the same year near Prince Albert by the Hon. Mrs. Eleanor Ryder, a well-known English gardener, who incidentally deserves recognition by us Californians for her generous donations of African seeds to the University of California, which resulted in the introduction of numerous new *Mesembryanthemum* to our collections.

Our species lacks the size and ruggedness of *Pleiospilos Bolusii*, but this is amply compensated for by the beautifully chiseled regularity of the plant and the splendor of its flowers. By virtue of a longer peduncle it is not, like its cousin, handicapped in development by having to struggle forth from between the leaves—*Bolusii*'s petals, though much longer, somehow always present a towseled appearance, as though it had just got out of bed without time to even comb its hair—in contrast to which *Nelii*'s are held aloft beautifully groomed like a soldier on parade, all neat and shining. If the former makes one think of ruggedly weathered fragments of dark granite, the latter seems the meticulous work of an Egyptian lapidary, smoothed to a dull polish by an artist's loving hands.

A pleasantly surprising fact developed during the Northern California frosts of December 1932 of unblest memory, namely that it proved even hardier (*sic* friend Victor Reiter Jr.) than its cousin, itself among the most resistant. To illustrate, the subject of the accompanying portrait, taken last March, had shivered in a temperature of probably 18° F. only three months before, entirely unprotected. Our British friends have lately been boasting of growing *Dudleya pulverulenta* in the open: here may be another candidate for trial. Which, though having nothing to do with our subject, reminds us that the last-mentioned well-known

* See JOURNAL II. 363, 1930.

native of ours, exhibited by Mr. Clarence Elliott at the Royal Horticultural Society, received an A.M. (Award of Merit). *P. Nelii* is so good an introduction that it would be a most likely subject for honors if we had A.M.'s and an R.H.S.

in this country.

Though superficially closely resembling *P. Bolusii*, *P. Nelii* is really quite distinct specifically, as will appear from the following tabulation of differences.

	<i>Pleiospilos Nelii</i> Schw.	<i>Pleiospilos Bolusii</i> (Hook. F.) N. E. Br.
<i>Leaves</i>	about 35 mm. long normally 4 to a growth smooth not obviously keeled olive	about 70 mm. long normally 2 to a growth rough distinctly keeled purplish-grey
<i>Flowers</i>	on short peduncles 30-45 mm. diameter open early in afternoon, spring top flattened-hemispherical	nearly sessile 50-70 mm. diameter. open late in afternoon, fall top flattish, abruptly conical at center
<i>Petals</i>	coppery, lower 1/3 pale	golden yellow
<i>Fruit</i>	valves thick, with raised sutures wings of expanding-keels lacerate opening slowly when wetted	valves thinner, sutures not raised not so opening rapidly.

FRICK'S NOTES

A newspaper item captioned "State Adopts Unusual Law" informs us that the state Legislature of Arizona changed the spelling of the State's official flower from "Sahuara" to "Saguaro" but to the Cactus-wise it is still spelled *Carnegiea gigantea*.

Over nine-tenths of the bulk of *Carnegiea gigantea* is water, and the outermost layer of the trunk of the cactus carries the pigment chlorophyll to a depth of a quarter of an inch.

* * *

J. P. Harrington of the Bureau of American Ethnology informs us that the Mission Indians of the Southwest, tattooed themselves by pricking their patterns with Cactus spines and then rubbing a bluish-black dye into the bleeding wound.

* * *

Orders for the book "Texas Cacti" by Ellen D. Schultz and Robert Runyon continue to come to this office. We again wish to make the announcement that this book is no longer available through the society librarian. The only edition of this work was limited to 2000 copies and is now out of print.

* * *

Observations with *Platyopuntia* at the Desert Laboratory at Tucson, Arizona showed that the tissues of mature joints which are not in a very active condition often show temperatures of 131° F., proving that the protoplasm of cacti has a constitution by which it withstands a higher temperature in active condition than the living material of any other plant or animal.

* * *

The San Fernando Valley Cactus & Succulent Society show this month was a huge success from the standpoint of interest, attendance, number of entries and finances. The publicity and visitors it brought to the city of San Fernando was very gratifying to the business men and residents of the community, and greater cooperation is expected from them in future shows.

PROGRAM . . 1933

Cactus and Succulent Society of America

Jan. 30, 1933 Pasadena Library
"Desert Mammals".....Dr. Rolland Ross

Feb. 17, 1933 El Centro School, So. Pasadena
"Ethno-Botany Arid Plants"

Frank Schilling, Carl Brassfield

March 10, 1933 Seeley Mudd Memorial Hall
of Philosophy, Univ. So. California

"Death Valley, New Federal Monument"

Chas. Gibbs Adams, Dr. Jacolyn Manning
Arthur Bennett, Carl Brassfield.

March 26, 1933 Annual Pilgrimage to Palm Springs
El Mirador Hotel, 10:00 A. M.

April 14, 1933 Pasadena Library

"Cacti of the Rio Grande Valley, El Paso to
the Gulf of Mexico".....Ernest Brauntton

April 23, 1933 Rancho Santa Fé

10:00 A. M. to Noon.....Pres. Adams
Anaheim, 3:00 o'clock

"Collector's Luck".....Howard Gates

May 7, 1933 Fairmont Park, Riverside, luncheon

Col. Bradbury's, Fontana, supper.....White Park

May 19, 20, 21. ANNUAL CACTUS AND SUCCULENT EXHIBIT. Pasadena.

May 19, 1933 President Adams' luncheon to
Judges and Officers.

June 18 Pasadena. Huntington Gardens, 1:30 to
4:30 P. M. Dr. Jacolyn Manning. 187 No. Craig
Ave. 5:00 to 6:00 o'clock.

Demonstration of "Flowering of *Cephalocereus
senilis*" who first bloomed "Old Man"

Dr. Wm. Hertrich

July 18, 1933 Long Beach (?)

July 25 to 31, 1933 Chicago Century of Progress
Cactus & Other Succulent Week.

Aug. 20, 1933 Annual Pilgrimage to San Diego.

Sept. 24, 1933 Annual Pilgrimage to Santa Barbara.

Sept. 29, 1933 Pasadena Library, 8:00 P. M.

Oct. 15, 1933 Glendora District. George McLain.
Luncheon 12, noon.

Maechten Cactus Garden, 2:00 to 4:00 P. M.

Oct. 27, 1933 Los Angeles, 8:00 P. M.

Nov. 24, 1933 Pasadena Library, 8:00 P. M.

Dec. 29, 1933 Los Angeles, 8:00 P. M.

JACOLYN MANNING,
Chairman Com. on Program.

MARGARET SAMUELS,
Chairman Com. on Meeting Place.

LABELLING AND CATALOGUING A CACTUS COLLECTION

By CARL SEELBACH

If you want to really enjoy a collection of cacti and other succulents, one of the most important considerations is the proper cataloguing and labelling of the collection. Dr. Houghton tells us in "The Cactus Book" that the collection at the Smithsonian Institute of Washington, D. C., is closed because the plant names are lost and mixed up.

A catalogue should contain all the information regarding a plant including any book references. Be sure to indicate the name of the party from whom you obtained the plant.

CATALOGUING

I find that a card index system is the most simple and by far the easiest for making corrections. You may get at the ten cent stores a regular 3 by 5 index card and also a card box.

As each plant is received, it is given a metal number tag, made of copper $\frac{3}{8}$ by $1\frac{1}{2}$ inches, on which I stamp the numbers with $\frac{3}{8}$ inch metal stamps. Regardless of the plant, it is given the next chronological number.

Once you give a plant a number, always leave it on the plant no matter how many times you change the name.

Two sets of index cards are used. On card No. 1, the plant number is placed in the upper left hand corner. On the first line put the plant name, followed by the author's name. If the plant is a new species, give the author's name and where the formal description was published. About the middle of the card, place the list of the books that refer to this plant. In the lower left hand corner place the name of the party from whom you got the plant and the date. In lower right hand corner, indicate the native habitat. The location of the plant in your collection should also be indicated and some collectors place the flowering record on the backs of the cards.

Rathbunia alamosensis (Coulter) Br. & R.

The Cactaceae Vol. II, P. 169
Standley T. & S. of Mex., P. 910

Glass House N. E.
Dr. A. D. Houghton, 4-1-32 Mexico

Arrangement of card

Card No. 2 is an exact duplicate of card No. 1 except that the card is filed alphabetically according to generic name. File card No. 1 in consecutive numbers. This will always give you easy access to any plant by name or by number.

This cross index works thus: By reference to the alphabetical list you can find any particular plant by name. If the names on the plants become defaced you can check back by number and remark it. The chronological number never changes whereas you may change the plant name several times.

MAKING LABELS

The following marking labels are the result of much experimentation and study to get something practical. I use three sizes of labels, $1\frac{1}{4}$ by $2\frac{1}{2}$ inches for small plants, and $1\frac{1}{2}$ by 3 inches for medium plants. 2 by 3 inches are used for large plants.

Cut galvanized iron sheet metal to size and the 10 gauge wire to 10 inches in length. Make a slight bend in the wire to place the label at the correct angle for reading and solder.

Dip the label in a solution of one part of muriatic acid to nine parts of water. Leave for fifteen minutes. Wash thoroughly in clear water and let dry. I use Rogers Brushing Lacquer to finish my labels. Give one coat of "Lacquer Metal Primer" and two coats of regular lacquer of a neutral shade. Let dry one hour between coats.

Rule off letter guide lines with very soft pencil. Use India drawing ink and an ordinary pen for lettering. Place on the label the following: Plant name, plant number, place of nativity and if a government import plant be sure to indicate import number.

Let the ink dry and give a light coat of the very best varnish.

Bend a loop in the lower end of the wire to help keep the label in its place in the ground.

Anyone desiring more information may address Carl Seelbach, 427 Ramona Avenue, Hawthorne, California or visitors are welcome on the first or third Sunday of each month.

Scientists tell us that *Opuntias* do not grow at a steady rate toward maturity as is supposed, but with a halting irregular progress. The plant may be shorter at sunset than it was at noon time, but the next morning however, it regains all that it lost and makes a slight extension which is more than was lost the day before. It is by such halting progress that full size is reached. The shrinkage of the stem in the heat and sunlight accounts for this phenomena.

"BAJA CALIFORNIA CACTI"

By W. TAYLOR MARSHALL

On January 19th, Mr. Carl Seelbach informed me that he would be unable to make the trip to Baja California with Howard E. Gates as had been planned. He suggested that I take his place and with the approval of Gates, the details were soon arranged.

The great adventure started on February 15th when we left Anaheim, Calif. Gates and I and his trusty dog named Senor Color de Cafe. We drove to San Diego and received from the Mexican Consul letters addressed to the Military and Civil authorities asking their cooperation in our scientific work which he stated received the fullest approbation of his Government. Armed with this letter and a permit to collect cactus issued by the Mexican Department of Agriculture we then crossed the international line at Tia Juana where we deposited the necessary cash bond on the car and completed the customs formalities.

Leaving Tia Juana for Ensenada we began at once to see magnificent specimen of *Bergerocactus emoryi*, *Ferocactus viridescens*, *Agave shawii* and *Machaerocereus gummosus* interspaced with *Opuntias* and *Dudleyas* in abundance. At the time I thought that no display of cacti could equal that near Ensenada but realized my error many times in the following three months.

From Ensenada we passed through miles of country adorned with immense plants of *Myrtillocactus cochal* as well as all the species seen on the first part of our trip so that our enjoyment of the trip was only slightly dampened when we bogged down in the Santo Domingo River, from which predicament we were rescued by three men and a team of mules sent to our assistance by Miss Hattie Hamilton whose wonderful and hospitable dude ranch is nearby.

One of the most remarkable features of the Peninsula is the entire geological changes that occur every 50 or 80 miles and one of these occurs as you leave El Rosario 60 miles south of Hamilton's Ranch. With the geological change there is also a change in plant life and from a point below Rosario we observed the beginning of many new varieties of cactus. *Pachycereus pringlei* towers 40 or 50 feet over the car. The tall and curious *Idria columnaris*, is closely related to the Ocotillo of our own deserts and from its shape is called the telegraph pole or the inverted carrot also reaches dizzy heights. The smaller coast species of *Ferocactus* (*orcutti* and *fordii*) yield to the larger inland

species and the beautiful reds and blacks of *Ferocactus gracilis* and *F. coloratus* mingle with the light olive green of *Lophocereus schottii*.

Then the road returns to the coast and we located the oddest of the peninsula's treasures: the little *Neomammillaria blossfeldiana* recently discovered by Gates. This plant with its 4 to 6 cm. of globular beauty, nestles among the pebbles of the beach just above high tide line. The appearance of the pebbles and the cacti are so alike that they can be distinguished only by the closest observation.

Two plants are found throughout the entire length of the northern territory of the peninsula: *Machaerocereus gummosus* which grows in all types of soil and under all the varied climatic conditions and whose stems if laid end for end would surely encircle the globe more than once, and *Neomammillaria dioica* which assumes so many shapes and appearances under different conditions that a novice would surely believe he had seen at least a dozen different species.

Only two of the milky species of *Neomammillarias* are native in the northern district: *N. brandegeei*, a flat topped plant growing level with the ground, and *N. gabbi* which grows large for this family and presents a brownish fuzzy and globular shaped face to peek from under the shelter of larger plants.

Space does not permit of even a partial description of the many other plants we encountered in the northern district but sometime soon I hope to tell you of the plant life in the southern district and the lifetime thrill of finding a new species of *Lophocereus* and the hardships we encountered on our trip which we considered as nothing when compared with the knowledge we gained.

Meanwhile my private collection, which contains all of the Baja California plants as well as many other species, is open to all cactus lovers and students. It is located at 327 North Avenue 61, Los Angeles, Calif.

Two Cactus shows in five months is the record held by the San Antonio, Texas cactus enthusiasts. The first show was held Feb. 2-9 and had as its setting the Art Gallery of the Witte Memorial Museum, with cactus paintings and desert scenes of the Edgar B. Davis prize collection hung between the exhibits.

The second show was held at the Spanish Governors Palace May 5 to 8. This being the flowering season for native plants in particular and a time when habitat groups could be worked out most skilfully in an outdoor setting. The first show was sponsored by the San Antonio Garden Club. The second by the newly organized San Antonio Cactus & Succulent Society.

EXHIBIT ON EVOLUTION

The following is a copy of the legend accompanying an exhibit shown at the recent cactus show, entitled "Evolution of Cacti."

"This exhibit attempts to briefly illustrate the probable evolutionary relationship of this interesting family of plants through a brief cross section of the many genera.

"In this comparatively recently developed plant family nearly all stages of development are in existence. The relationship of many genera is plainly evident, so close in many instances that there is considerable difference of opinion as to whether or not certain varieties are entitled to specific rank.

"The first tribe, the Pereskieae, have ordinary non-succulent leaves, a flower stalk and spines like many other plants of different families. The second tribe, the Opuntieae, are without or have only small abortive leaves, flowers without stalks and more highly developed areoles with glochids. The third and last tribe have many and varied genera, the Cereeae. These have areoles without glochids, no leaves, and flowers with definite tubes, except the last genus, *Rhipsalis*."

Attached is a list of the plants shown in this exhibit.

R. W. KELLY.

Plants shown in exhibit

1st Tribe

Pereskia pereskia
Pereskopsis diguetii
brandegii
gatesii

2nd Tribe

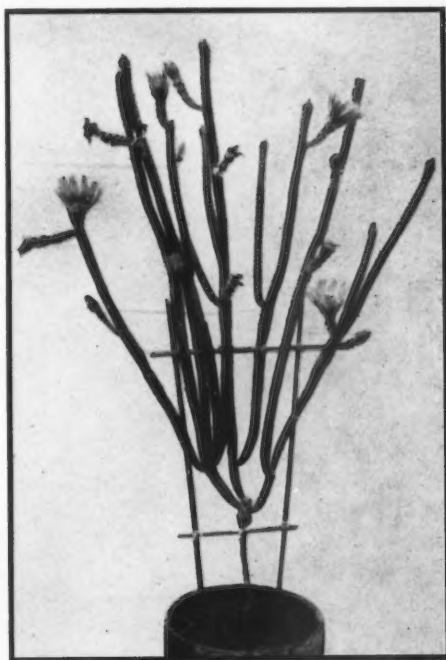
Nopalea dejecta
Opuntia ramosissima
leptocaulis
parryi
echinocarpa
bigelovii

subulata
drummondii
basilaris
erinacea
brasiliensis

3rd Tribe

Cereus hexagonus
xanthocarpus
Monvillea cavendishii
Cephalocereus senilis
Escontria chiotilla
Pachycereus pringlei
Lemaireocereus griseus
dumortieri
Bergerocactus emoryi
Nyctocereus serpentinus
Acanthocereus pentagonus
Heliocereus speciosus
Trichocereus spachianus
pasacana
macrogonus
Harrisia martinii
Borzacactus straussii
Carnegiea gigantea
Oreocereus celsianus
Hylocereus undatus
Selenicereus grandiflorus
hamatus
Mediocactus coccineus
Aporocactus flagelliformis
Echinocereus delaetii
chloranthus
engelmannii
Rebutia minusculus
Chamaecereus silvestrii
Echinopsis eyriesii
Ariocarpus fissuratus

Pediocactus simpsoni
Hamatocactus setispinus
Ferocactus acanthodes
Echinomastus intertextus
Gymnocalycium gibbosum
Echinocactus grusonii
Astrophytum asterias
Malacocarpus ottonis
Cactus maxonii
Neolloydia texensis
Coryphantha robustispina
deserti
Escobaria tuberculosa
Phellosperma tetrancistra
Neomammillaria applanata
fragilis
microcarpa
Zygocactus truncatus
Epiphyllum angulier
Nopalxochia phyllanthoides
Rhipsalis cassutha



WILCOXIA POSELGERI

A photo, in a current magazine, of *Wilcoxia poselgeri* prompts me to send this picture of *Wilcoxia* that was grafted on *Pereskia pereskia* less than three years ago. It bloomed annually, but this year, it started to bloom the end of January (in the greenhouse of course). From its thirteen branches came twenty-three flowers opening from one to four at a time. Just before it was cut back six or eight other buds were pushing out. This season it should make over thirty branches. Last year's total growth of all the branches approximated over 92 inches. Incidentally, cuttings from the plant have bloomed.

R. F. MANDA.

THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

An International Society for all lovers of Xerophytes

Headquarters: 1800 MARENGO ST., LOS ANGELES, CALIFORNIA

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SPECIAL this month: 10 named Sedums postpaid \$1.00. KNICKERBOCKER NURSERY, R. 1, San Diego, Calif.

VISITORS ARE WELCOME at the home of our Show's prize winning cactus collection. An abundance of propagations and seedlings. HOWARD E. GATES, 117 S. Illinois St., Anaheim, Calif.

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CACTUS AND ROCK GARDEN PLANTS—From Texas' largest collection. Lists wholesale and retail, also seeds. SHINER CACTUS NURSERY, Box 2, Laredo, Texas.

WITH EACH ORDER amounting to \$5.00 we will give as a premium 25 small Cacti, 1 to 2½ inches high, 12 or more varieties. \$10.00 order, 50 small Cacti as premium, etc. No limit to amount of order. A. R. DAVIS, P. O. Box 167, Marathon, Texas. Also Cacti Seed. Write for prices.

30 CACTI in 10 varieties \$1.00 (no Opuntias). Large specimens of Homalocephala texensis, Echinocereus reichenbachii, caespitosus, dasycanthus, Hamatocactus setispinus. Coryphantha vivipara and Neomexicana 10c each. \$1.00 per dozen. GUY QUINN, R. 2, Eastland, Texas.

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THE CACTUS BOOK

by
A. D. Houghton

From this book you will learn the secrets of successful watering, how to grow Cacti from seeds, how to propagate the rare species by grafting, how to hybridize, how to have a Cactus rockery, how to grow indoors in pots, and on window sills, how to purchase and trade to get new sorts and what kinds to grow for different effects. Also introduces you to more than 1,000 different kinds of Cacti with information for selecting the types you need for every purpose and location.

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MEXICAN CACTI. 100 different cacti free U. S. \$25.00. 1000 different cacti (at least 100 different species) postage free U. S. \$125.00. **CACTI SEEDS.** Fresh seeds from my own open air plantations. Germination certain. I possess special Mexican Government export permit. Ask for list. FERDINAND SCHMOLL, Cadereyta, Qro. Mexico.

CACTUS CULTURE

This is the most up-to-date, practical and comprehensive book published on the culture of Cacti. The most experienced as well as the beginner will find in this book suggestions which will prove both profitable and interesting. 186 pages 5½x8 with fabrikoid binding. Price \$2.00. Cactus & Succulent Society of America, 1800 Marengo St., Los Angeles, Calif.

BOUND VOLUMES of the Cactus Journal, Vol. I, II, and III, are now on sale; these will be very valuable before many years, so take advantage of the opportunity at this time, price \$6.00 per volume. **CACTUS AND SUCCULENT SOCIETY, 1800 Marengo St., Los Angeles, Calif.**

* * *

The Editor wishes to correct false reports concerning W. H. Orpet's work: Nothing is being sold from the Wright collection in Santa Barbara except seedlings of from three months to three years old, and a few duplicates of some of Mrs. Wright's original plants. Far from being sold, the collection is constantly being increased by exchange or purchase. The records are also being kept, with photographs taken and identifications verified.

* * *

The greatest example known to science of the invasion of a plant pest or noxious weed into any country is that of *Opuntia inermis* into Australia. The first introduction of this species of Opuntia was in a flower pot about the year 1839 and from this one plant the tremendous infestation developed. About the year 1870 the growth got beyond control. By 1893 many thousand pounds had been spent on its eradication without success, by 1900 the Opuntia claimed an area of 10,000,000 acres, and by 1920, 60,000,000 acres. At this time the spread was at the rate of 1,000,000 acres per year. The climax was reached in 1925 when measures were taken to combat the scourge, since then the yearly increase has been entirely arrested. In a visit to the writers collection, Dr. Pulliense of South Australia informed me there were patches the size of the state of Arizona that not even a snake can penetrate.

